Distribution of bromine in the products of decomposition of Solikamsk carnallites. A. I. Sagaidachnyi and S. S. Sinani. Trans. State Inst. Applied Chem. (U. S. S. R.) 1933, No. 18, 37-43 — An attempt to det. the Br content in the products of cold decompn. of carnallite of Efremov and Veselovskoi, C. A. 24, 9225, contg. 1746. He produced insconclusive results. C. B.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR Physics - Heat conductivities

Card 1/1   Pub 153 - 25/9

Author   : Ioffe, A. V.; Sinani, S. S.

Title   : Brief communication. Heat conductivity of oxides of elements in the second group of the periodic system

Periodical   : Zhur. tekh. fiz., 25, No 9 (September), 1955, 1659-1661

Abstract   : In an earlier work (A. V. Ioffe, A. F. Ioffe, DAN SSR, X, No 5, 7, 821, 1954) it was shown for elements of the 4th group and for alkali-halide salts that their specific heat conductivity decreases with increase in atomic weight and that furthermore for identical atomic weight the heat conductivity of atomic lattices exceeds in order of magnitude the heat conductivity of ionic compounds. On the suggestion of A. F. Ioffe the present writers undertook the investigations described in this note with the purpose of verifying the applicability of the above conclusions to other substances, especially to clarify whether a comparatively weak difference in the character of the crystallochemical bonds is reflected along with the dependence upon atomic weight varying in the limits from 9 (Be) to 200 (Hg). For study the authors choose the oxides BeO, MgO, CaO, ZnO, SrO, CdO, BaO, HgO. Their measurements confirm the systematic lowering of heat conductivity with increase in atomic weight for all the oxides except BeO and MgO (which have structure of porous powder). They thank G. N. Gordyakova for preparation of the specimens.

Submitted   : June 14, 1955

USSR/Physics - Semiconductors   G-3

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 12231

Author   : Sinani, S.S., Gordyakova, G.N.
Inst   :
Title   : Solid Solutions $Be_2Te_3-Bi_2Se_3$ as a Material for Thermocouples

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 10, 2398-2399

Abstract : A brief discussion of the results of an investigation of the thermoelectric properties of solid solutions on the basis of two solutions of Bi_2Te_3 and Bi_2Se_3, similar in chemical and structural relationship, with addition of free metals, halides, and halogenides. A table of the thermoelectric properties of the investigated solutions is given.

A new semiconducting alloy is developed for thermocouples, having high $Z = \varkappa^2 \sigma / x$ and good mechanical properties. A thermocouple with a negative branch of this alloy gives a temperature drop of approximately 60°.

Card 1/1

S/N #N1   S S.

Distr: 4E2c

Composition for the negative branch of a thermoelement.
S. S. Sinani, G. V. Kokosh, G. I. Gordyakova, and A. N.
Shadrina. U.S.S.R. 107,420, Oct. 25, 1957. The neg.
branch of a thermoelement is made of a solid soln. of Bi_2Te_3
and Bi_2Se_3 to which is added a halide or Cu or Ag.
                                              M. Hoseh

57-1-1/30

AUTHORS: Jordyakova, U. N., Kokosh, G. V.
             Sinani, S. S.

TITLE: The Investigation of Thermoelectrical Properties of
             Bi_2Te_3 - Bi_2Se_3 Solid Solutions (Izucheniye
             termoelektricheskikh svojstv tverdykh rastvorov Bi_2Te_2 -
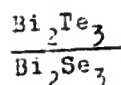 Bi_2Se_3).

ABSTRACT: The purpose of this work was to find new semiconductor
             materials for thermocouples. As for the positive part of
             the thermoelement the alloy of Sb_2Te_3 and Bi_2Te_3 is known as
             the best at present, the authors tried to find a material
             for its negative part. In this respect Bi_2Te_3 is already
             of interest. First the electrical properties of alloys of the
             Bi_2Te_3 - Bi_2Se_3-system without additions were investigated.
             As basic material bismuth, tellurium and selenium were used.
             The content of basic substance in them was · 99,97 %. The
             predominant addition in bismuth was lead. The radiograms of
             the investigated Bi_2Te_3 - Bi_2Se_3 alloy showed the formation

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The Investigation of Thermoelectrical Properties of   57-1-1/30
Bi_2Te_3 - Bi_2Se_3 Solid Solutions

solid solutions within the range of from 100 to 80% Mol
Bi_2Te_3 and of from 70 to 100% Bi_2Se_3. The radiogram were
taken by R. A. Zvinchuk in the A. M. Yelistratov laboratory.
The investigations for the electric conductivity and for the
thermo-e.m.f. (electromotive force) carried out according
to the compensation method show that the former gradually
decreases with its distance from the basic double compounds.
With a ratio close to one of

$$\frac{Bi_2Te_3}{Bi_2Se_3}$$

it is minimal. The thermo-e.m.f. curve of change shows the
course characteristic for solid solutions of substances with
carriers of two signs: starting from Bi_2Te_3 the thermo e.m.f.
is positive and increase to an alloy of 20% Bi_2Se_3, then
it decreases and changes the sign at ~65 % Bi_2Te_3, and
then stays negative to pure Bi_2Se_3. The authors stated that
a small surplus of tellurium and selenium transform the
Bi_2Te_3-rich alloys into electron-alloys.

Card 2/4

The Investigation of Thermoelectrical Properties of
Bi_2Te_3 - Bi_2Se_3 Solid Solutions

The further investigations concerned the effect of the additions on a 20 % Bi_2Te_3 and 20% Bi_2Se_3 containing solid solution. As additions served elements as well as compounds. The authors show that of the simple substances the elements of the 2nd, 3th, 4th, 5th and 6th group of the periodic system exercise an effect of acceptors, while halide, copper, silver, tellurium and selenium exercise that of donors. The alloys of the p-type are characterized by low movability values as well as by a^2c. The alloys of the n-type were obtained with sufficiently high indices for practical use. The best thermoelectrical properties were obtained with an addition of halides of the first group of the elementary system of with element-copper. The Z-values of the samples with optimal composition reached $2.5 \cdot 10^{-3}$ degree^{-1}.
a = the thermo-e.m.f.; γ = the thermal conductivity,
$Z = \dfrac{a^2 c}{x}$. The investigation of the effect of compensated additions showed that the increase to be expected of a did not occur. With samples the same concentration of carriers,

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The Investigation of Thermoelectrical Properties of   57-1-1/30
Bi_2Te_3 - Bi_2Se_3 Solid Solutions

with or without compensation additions, the thermo-e.m.f.
remained practically the same.
The authors were advised by L. S. Stil'bans and A. V.
Ioffe submitted the data on the thermal conductivity of the
investigated solutions.
There are 11 figures, 5 tables, and 14 references, 9 of which
are Slavic.

ASSOCIATION: Institute for Semiconductors AN USSR, Leningrad (Institut
poluprovodnikov AN SSSR Leningrad)

SUBMITTED: September 24, 1957

AVAILABLE: Library of Congress

Card 4/4

AUTHORS: Gordyakova, G. N., Sinani, S. S.   57-28-5-10/36

TITLE: Thermoelectric Properties of Bismuth-Telluride With
               Alloying Admixtures
               (Termoelektricheskiye svoystva tellurida vismuta s legi-
               ruyushchimi dobavkami)

ABSTRACT: In recent years the interest of numerous scientists has
               been attracted by the thermoelectric properties of bis-
               muth telluride (Reference 1). By the introduction of im-
               purities these properties can be varied to a considerable
               degree, and can also change the sign of the current car-
               riers. The present paper contains the results of the in-
               vestigation of the influence on the electric conductivity
               and the thermo e. m. f. of Bi_2Te_3 as well as determina-
               tions of the temperature dependence of the conductivity
               and of the thermo e. m. f. of samples with a varying car-
               rier concentration. The purity of the bismuth and tellu-
Card 1/3   rium used for the production of the alloy corresponded

Thermoelectric Properties of Bismuth-Telluride   57-28-5-10/36
With Alloying Admixtures

to the purity of the basic substance $\sim$99, 97% Figure 1
shows the values of the electric conductivity σ, of the
thermo e. m. f. α and of $\alpha^2\sigma$, which were determined in
the measurements of the alloyed samples of Bi_2Te_3. The

addition of lead provided the bismuth telluride with a
hole conductivity. The determined maximum values of σ
amounted to 1300 Ohm $^{-1}\cdot$cm $^{-1}$. The concentrations of the
carriers n (Figure 2) per cm^3 and the mobility u were
computed according to the effect of Kholl for alloyed
samples of Bi_2Te_3. Figure 3 shows the dependence of the

mobility on the concentration for samples with additions
of J, CuBr and Pb. The measurement results of α, σ and
$\alpha^2\sigma$ are given in figure 4. The experiments showed, that
1) the temperature course of σ and α is independent of
the addition of iodine or CuBr. 2) the temperature rise
is accompanied by a reduction of electric conductivity,
which is the more marked, the higher the initial $\cdot\sigma$ is.
3) the thermo e. m. f. varies as follows: At initial

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Thermoelectric Properties of Bismuth-Telluride   57-20-5-15/36
With Alloying Admixtures

values of $\alpha \simeq -15o$ microvolt/^oC it decreased with mounting temperature, at initial values of $\alpha \simeq -1oo$ microvolt/^oC it remained constant and at initial values of $\alpha \simeq -8o$ microvolt/^oC and below it increased with temperature. 4) the values $\alpha^2\sigma$ decrease in samples with a great initial thermo e. m. f. and small σ, at a temperature rise. In samples with an initial value of σ of about 3ooo and of σ of the order of 1oo microvolt /oC, $\alpha^2\sigma$ at 3oo^oC was equal to that at room temperature. This is interesting for the practical application of Bi_2Te_3.

The authors are indebted to L. S. Stil'bans for valuable suggestions.
There are 4 figures and 2 Soviet references.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad
              (Institute for Semiconductors, AS USSR, Leningrad)
SUBMITTED: July 12, 1957

DATE 5/5   1. Bismuth tellurides--Electrical properties   2. Bismuth
               tellurides--Thermal properties

81626
S/181/60/002/06/14/050
B122/B063

24.7600
AUTHORS: Kokosh, G. V., Sinani, S. S.

TITLE: Thermoelectric Properties of Alloys of the Pseudobinary
              System Sb_2Te_3 - Bi_2Te_3

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1118 - 1124

TEXT: The present paper describes the effect of changes in concentration
and various impurities of the system Sb_2Te_3 - Bi_2Te_3 upon its electrical con-
ductivity δ and thermoelectromotive force α. The amount of the individual
components of the specimens was systematically changed by a shift of the
stoichiometry. A preliminary examination and a discussion of the Bi-Te and
Sb-Te phase diagrams by means of data supplied by N. K. Abrikosov, L. V.
Poretskaya, and I. V. Ivanova (Refs. 2 and 4) has shown that, besides
Bi_2Te_3 also BiTe, Bi_2Te, and $Bi_{14}Te_6$ may be present in the system Bi-Te.
The two systems have some features in common but also characteristic dif-
ferences. The two compounds crystallize out in the lattice with stoichio-

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81626
S/181/60/002/06/14/050
B122/B063

Thermoelectric Properties of Alloys of the
Pseudobinary System Sb_2Te_3 - Bi_2Te_3

metrically insufficient quantities of Te, but this is more distinctly mark·
ed in the case of Sb_2Te_3. Figs. 1 and 2 show the effect of annealing and
pressing of the specimens on α and σ, depending on their concentration.
Annealing for a long time (15 days) increased the p-type thermoelectromotive
force of specimens enriched with Sb_2Te_3 and the n-type thermoelectromotive
force of specimens enriched with Bi_2Te_3. The change in α at a ratio of
Bi_2Te_3 : Sb_2Te_3 = 2:1 indicated the beginning of a reorientation in these
specimens. Similar observations by S. V. Ayrapetyants and B. A. Yefimova
(Ref. 5) are mentioned. The α-curves exhibited the mixed p- and n-type
which is characteristic of solid solutions. In order to explain the ccisi-
derable rise of α on long annealing, the authors examined the distribution
curve of α at different compositions (Fig. 3) as well as the course of the
α-curve with shifted stoichiometry as dependent on the admixtures of donor
and acceptors (Fig. 4). It is assumed that tellurium penetrates into the
lattice when the specimens are hot-pressed and especially when they are
annealed. Though this also leads to a decrease in the hole concentration of
the system enriched with Sb_2Te_3, the p-type thermoelectromotive force

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81626
S/181/60/002/06/14/050
B122/B063

Thermoelectric Properties of Alloys of the
Pseudobinary System Sb_2Te_3 - Bi_2Te_3

nevertheless rises since Sb_2Te_3 has p-type conductivity, whereas the
thermoelectromotive force already existing in the specimens enriched with
Bi_2Te_3 is increased by the addition of electron-emitting Te. The thermo-
electric properties of the system are obtained from Figs. 3 and 4 for any
concentration ratio. Next, the authors examine the effect of impurities on
the said properties of the system with a change in its composition. The
authors performed three series of experiments using pure Bi and 1) Sb of
the type Cy-0 (Su-0) with Te No. 2; 2) Sb: Cy-0 (Su-0), Te No. 3;
3) Sb: Cy-100 (Su-100), Te No. 1. Analytical data on substances obtained
by D. M. Shvarts are listed in Tables 1 and 2. The negativity of α of the
alloys in the region of 50 - 100 % Bi_2Te_3 increases with increasing purity.
The maximum of the positive α was shifted with increasing impurity concen-
tration toward the side of higher Bi_2Te_3 content. The impurities increase
their electrical conductivity. The maximum of the positive thermoelectro-
motive force could be increased when no impurities were added. As was
shown by A. V. Ioffe, the parts with minimum heat conductivity and maxim-
um α coincide (Fig. 8). There are 8 figures, 3 tables, and 5 references:
4 Soviet.
Card 3/4

Thermoelectric Properties of Alloys of the
Pseudobinary System Sb_2Te_3 - Bi_2Te_3

81626
S/181/60/002/06/14/050
B122/B063

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad
(Institute of Semiconductors of the AS USSR, Leningrad)

SUBMITTED: November 3, 1959

Card 4/4

L 4023-66   EWT(m)/ETC/EWG(m)/EWP(t)/EWP(b)   IJP(c)   RDW/JD
ACCESSION NR: AP5022259   UR/0363/65/001/007/1098/1103
                                       546.87'241+546.87'861

AUTHOR: Gordyakova, G. N.; Sinani, S. S.

TITLE: Anisotropy of the properties of solid solutions of the system Bi sub 2 Te sub 3-Bi sub 2 Se sub 3 obtained by sintering

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1098-1103

TOPIC TAGS: bismuth alloy, selenium alloy, electric conductivity, thermoelectromotive force, Hall effect, tellurium alloy, solid solution

ABSTRACT: Samples of variable composition $Bi_2Te_{3-x}Se_x$ (x ranging from 0 to 3) were synthesized from the elements, and $CdBr_2$ was added in amounts from 0.05 to 0.40 wt.%. The anisotropy of electrical conductivity σ, thermo-emf α, and Hall effect R_x was studied. In compositions ranging from Bi_2Te_3 to $Bi_2Te_{2.1}Se_{0.9}$, the anisotropy of electrical conductivity is approximately constant and equal to 2.0; it is approximately 3.0 in Bi_2Se_3. The samples may be regarded as being practically isotropic with respect to the thermo-emf. A relationship between the anisotropy of the Hall effect and the composition is established. As the Bi_2Se_3 content increases, the anisotropy of the Hall effect decreases from $R_x\|/R_x\perp=1.5$

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L 4023-66
ACCESSION NR: AP5022259

in bismuth telluride samples to 0.9 in bismuth selenide, passing through a value
equal to 1.0 in a composition close to Bi_2Te_2Se. The effect of various halogens
on the electron mobility is established by adding $CdCl_2$, $CdBr_2$, and CdI_2 to the
alloy with 80 mole% Bi_2Te_3. The mobility declines in the series Cl-Br-I,
apparently as a result of the increasing ionic radius. "We thank B. A. Yefimova
for helpful suggestions and for reviewing the results." Orig. art. has: 6
figures and 1 table.

ASSOCIATION: Institut poluprovodnikov Akademii nauk SSSR (Institute of Semi-
conductors, Academy of Sciences SSSR)

SUBMITTED: 18Mar65   ENCL: 00   SUB CODE: SS, MM

NO REF SOV: 008   OTHER: 014

Card 2/2

SINANOVIC. STEVAN

　　　　Pet godina rade drzavnih poljoprivredno-masinskth stanica u FNRJ.
　　　　Beograd, Polijoprivredno izdavacko preduzece, 1950. 68p.
　　　　(Five years of operation of the state agricultural machine stations
　　　　in the Federal People's Republic of Yugoslavia. Illus.)

So. EAST EUROPEAN ACCESSIONS LIST   Vol. 5, No. 7 July 1956

SINANOVIC, S.

SINANOVIC, S.

Yugoslavia (430)

Agriculture - Plant and Animal Industry

Improvement of agricultural production. p. 30. SOCIALISTICKA
POLJCPRIVREDA, Vol. 2, no. 2, February 1951.

East European Accessions List, Library of Congress, Vol 1,
no. 14, Dec. 1952. UNCLASSIFIED.

KRBEKYAN, G. Ye.; SINANYAN, E.G.; AKOPYAN, A.N.

Chemistry of divinylacetylene and its halo derivatives. Report
No.15: Copolymerization of trans-2,3,4,5-tetrachloro-1,3,5-hexatriene
with vinyl chloride and vinylidene chloride. Izv. AN Arm.SSR. Khim.
nauki 16 no.2:145-150 '63   (MIRA 17:8)

1. Institut organicheskoy khimii AN ArmSSR.

AUTHORS: Krbekyan, G.Ye., Sinanyan, E.G., Akopyan, A.N.

TITLE: Investigations in the field of divinylacetylene and its
             halide derivatives.   Communication 12. A study of
             copolymerisation of trans-2,3,4,5-tetrachlorohexatriene-
             1,3,5 with isoprene, chloroprene and methylvinylketone

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya. Khimicheskiye
             nauki, v.15, no.6, 1962, 527-533

TEXT: Reactions of copolymerisation of 2,3,4,5-tetrachloro-
hexatriene-1,3,5 (TCHT) with isoprene (I), chloroprene (CP) and
methylvinylketone (MVK) were investigated.   The copolymerisation
was carried out in the presence of 0.1% of benzoyl peroxide at
70°C by a previously described method (A.N.Akopyan,
V.S.Aslamazyan, Izv. AN ArmSSR, KhN, v.13, 1960, 155).   The
copolymers obtained were separated by double precipitation with
methanol from solutions in benzene, except for copolymers
obtained at molar ratios of starting mixtures of monomers
TCHT-MVK 0:10, 1:9   and 2:8 which were precipitated with
petroleum ether, as well as copolymer of TCHT with CP (2:8) and
Card 1/2

Investigations in the field ...

S/171/62/015/006/003/006
E071/E492

polychloroprene which was precipitated with methanol from a
mixture of benzene with toluene. All polymers were dried at 50
to 60°C in vacuo to a constant weight. The composition was
determined from analysis for chlorine. The dependence of the
velocity of copolymerisation and composition of copolymers on the
starting ratio of monomers was determined and from this the
relative activities of monomers were calculated by the Mayo-Lewis
and Fineman-Ross methods. TCHT was found to be a more active
monomer than I and MVK but less active than CP. There are
3 figures and 5 tables.

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR
(Institute of Organic Chemistry AS ArmSSR)

SUBMITTED: November 3, 1962

Card 2/2

L 13549-63   EPR/EWP(j)/EPF(c)/EWT(m)/BDS   ASD   Ps-4/Pc-4/Pr-4   RM/WW
ACCESSION NR: AP3000694   B/0190/63/005/005/0681/0686   72
                                                                                     71

AUTHOR: Akopyan, A. N.; Krbekyan, O. Ye.; Sinanyan, E. O.

TITLE: The chemistry of divinylacetylene and its halides. 9. Copolymerization of
trans-2, 3, 4, 5-tetrachlorohexa-1, 3, 5-triene with methyl acrylate and methyl
methacrylate

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 5, 1963, 681-686

TOPIC TAGS: divinylacetylene, copolymerization, methyl acrylate, methyl methacry-
late, styrene

ABSTRACT: The synthesis of a new monomer, trans-2, 3, 4, 5-tetrachlorohexa-1, 3,
5-triene (TCHT) was reported in an earlier paper by the senior author, and the
present work was undertaken to study further its properties and to find its proper
place among the monomers. The copolymerization of TCHT with methyl acrylate and
methyl methacrylate was conducted in pyrex glass ampules at 70C, in the presence
of 0.1 Mol% benzoyl peroxide. The resultant product was isolated by extraction with
benzene and precipitation with ethanol. The investigation of these copolymers, as
well as of the ones studied in the earlier paper, provided data for the determina-
tion of their reactivity ratios and permitted the calculation of the specific re-
activity (Q = 1.52) and polarity (e = +0.6) values of TCHT by means of Alfrey-
Card 1/2

L 13549-63

ACCESSION NR: AP3000694

Price's equation. On the basis of these figures, the behavior of TCHT in copoly-
merization reactions with various monomers is being predicted. Orig. art. has: 1
formula, 3 charts, and 7 figures.

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR (Institute of Organic
Chemistry, Academy of Sciences ArmSSR)

SUBMITTED: 16Oct61   DATE ACQ: 17Jun63   ENCL: 00

SUB CODE: CH   NO REF SOV: 002   OTHER: 004

Card 2/2

L 49757-65   EPA(s)-2/EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T/EWP(t)/EWP(k)/EWP(b)/
(C)   Pc-4/Pf-4/Pr-4/Ps-4   JD/WW/WH/RM   UR/0286/65/000/007/0086/0086

ACCESSION NR: AP5010898

AUTHOR: Akopyan, A. N.; Glagolev, V. A.; Il'in, N. S.;
Krbelyan, G. Ye.; Kurdin, L. N.; Sinanyan, E. G.

TITLE: A method of cementing rubber to metal. Class 22, No. 169728

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 86

TOPIC TAGS: rubber to metal bond, chlorinated polymer, cemented
rubber

ABSTRACT: A solution of a chlorinated copolymer of tetrachloro-
hexatriene and styrene, or acrylonitrile in an organic solvent can
be used in cementing rubber to metal in the course of vulcanization.
This extends the assortment of bondable rubber types and may serve
to improve bond strength.   [VS]

ASSOCIATION: none

SUBMITTED: 21Dec62   ENCL: 00   SUB CODE: MT, OC

NO REF SOV: 000   OTHER: 000   ATD PRESS: 3231

Card 1/1

SINANYAN, G.A.

Genetic types and potentials of lead-zinc deposits in the
Armenian S.S.R. Trudy Arm.geol.upr. no.1:41-49 '57.
(MIRA 12:1)

(Armenia--Ore deposits)

AZIZBEKOV, Sh.A.; AMIRASLANOV, A.A.; ASLANYAN, A.G.; MUSTAFABEYLI,
M.A.; SINANYAN, G.A.; TVALCHRELIDZE, G.A.; TSOY, V.;
KITAYENKO, L.G., red. izd-va; SHMAKOVA, T.M., tekhn. red.

[Geology of lead and zinc deposits in the Caucasus and their
distribution features] Geologiia svintsovotsinkovykh mesto-
rozhdenii Kavkaza i zakonomernosti ikh razmeshcheniia. Otvet.
red. A.A.Amiraslanov. Moskva, Gosgeoltekhizdat, 1962. 165 p.
(MIRA 15:7)

(Caucasus—Lead ores)
(Caucasus—Zinc ores)

AUTHOR: Sinanyan, O.

TITLE: The use of the ИТУ-495 (ITU-495) radioactive measuring gage for the continuous measure-
            ment of aluminum-sheet thickness

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. Ismeritel'naya tekhnika, no. 7, 1962, 11, abstract
            32.7.71. "Promyshlenost Armenii", no. 6, 1961, 30–32 (Russian)

TEXT: Description is given of the working principle and basic characteristics of the radioactive gage for
measuring thin aluminum sheets having a thickness of 0.027 to 0.225 mm. The device used at the Erivan
aluminum plant comprises two beta-radiation sources (Strontium 90 radioisotope) a radiation counter com-
posed of a working and ionization chamber, a common collecting electrode, an electronic amplifier and an
indicating device. The current intensity in the working counter varies with the thickness of the sheet to be
measured. The difference between the current intensities in the working and ionization chambers, generates a
d.c. voltage drop; the voltage is converted into a.c. voltage which, after amplification, is applied to an electric
motor for shifting the curtain of the radiation compensating device until the levelling of the current intensities
in both chambers. The rotation angle of the curtain, corresponding to the sheet thickness, is read on an
indicating device. There are 4 figures.

[Abstracter's note: Complete translation.]

Card 1/1

SINANYAN, R., kand.tekhn.nauky SHAPOSHNIKOV, S., gornyy inzh. marksheyder

Mine surveying in the mining enterprises of Armenia. Prom.Arm.
5 no.3:24-26 Mr '62.   (MIRA 15:4)
                        (Armenia—Mine surveying)

SINANYAN, R. R.

Sinanyan, R. R. -- "Overground Stereophotogrammetric Survey of Open-Cut Mining Operations." Cand Tech Sci, Donets Industrial Inst, Stalino-Donbas 1953. (Referativnyy Zhurnal--Astronomiya, Jan 54)

SO: Sum 168, 22 July 1954

LAPKIN, I. Ya. Yakovlevich, SIMONYAN, Ruben Rubenovich, PAVLOV, F.I.,
professor, doktor, retsenzent; PROKUDOV, M.A., kandidat tekhni-
cheskikh nauk, retsenzent; IGLOPLIN D.M., redaktor; PARTSUVERIY,
V.N., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor.

[Stereophotogrammetric surveying of open-cut mines] Stereofotogram-
metricheskaia s"emka kar"erov. Moskva, Gos. nauchno-tekhn.izd-vo
lit-ry po chernoi i tsvetnoi metallurgii, 1956. 177 p.   (MIRA 9:8)
(Photogrammetry) (Mine surveying)

SINANYAN, R.R., kand. tekhn. nauk

Introducing igdanite in strip mines of the Armenian S.S.R.
Vzryv. delo no.54/11:291-295 '64.   (MIRA 17:9)

1. Nauchno-issledovatel'skiy gornometallurgicheskiy institut
Soveta narodnogo khozyaystva Armyanskoy SSR.

SINANYAN, R.R., kand. tekhn. nauk

Introduction of "igdanit" in oper.-pit mines of the Armenian
S.S.R., mechanization of its preparation and blasthole
charging. Gor. zhur. no.7:31-34 Jl '63.   (MIRA 16:8)

1. Nauchno-issledovatel'skiy gornometallurgicheskiy institut,
g. Yerevan.

SIMONYAN, A. T., zasluzhennyy deyatel' nauki, prof.; HANAGYULYAN,
    O. A., kand. med. nauk; GYULIKEKHVYAN, N. G.; SINANYAN, R. T.;
    GRIGORYAN, Ye. A.

Therapeutic effectiveness of a preparation of vanilon. Vrach.
delo no.7:44-46 Jl '62.   (MIRA 15:7)

1. Klinika gospital'noy terapii (zav. - zasluzhennyy deyatel'
nauki, prof. A. T. Simonyan) Yerevanskogo meditsinskogo insti-
tuta.

(CYCLOHEXANONE)

85238

S/022/60/013/002/009/011 XX
C111/C222

16.3000   16.4100

AUTHOR: Sinanyan, S.O.

TITLE: Determination of an Analytic Function From its Asymptotic Series
          in the Domain Re $z^{1/\alpha} > a^{1/\alpha}$

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-mate-
              maticheskikh nauk, 1960, Vol. 13, No. 2, pp. 17-30

TEXT: The sequence $\left\{ m_n \right\}$ satisfies the condition C_α $(\alpha > 0)$ of Carleman if

$$\sum_{k=0}^{\infty} \beta_k^{-\frac{1}{\alpha}} = +\infty \quad , \quad \beta_k = \inf_{n \geq k} \sqrt[n]{m_n} \; .$$ Let the function $f(z)$ analytic in X

Re $z^{1/\alpha} > a^{1/\alpha}$ have there the asymptotic series $\sum_{k=0}^{\infty} \dfrac{a_k}{z^k}$, where

$$\left| f(z) - \sum_{k=0}^{n-1} \frac{a_k}{z^k} \right| \leq \frac{m_n}{|z|^n} \quad , \quad \text{Re } z^{1/\alpha} > a^{1/\alpha} \; , \quad n = 0,1,2,\ldots$$

Card 1/4

85238

Determination of an Analytic Function From its   S/022/60/013/002/009/011 XX
Asymptotic Series in the Domain   C111/C222

Re $z^{1/\alpha} > a^{1/\alpha}$

The author investigates the question how $f(z)$ can be determined from the a_k.

Theorem 1: If the function $f(z)$ analytic in   Re $z^{1/\alpha} > a^{1/\alpha}$ ($a > 0$), $0 < \alpha \leq 1$:

a) in this domain has the asymptotic series $\sum\limits_{k=0}^{\infty} \dfrac{a_k}{z^k}$ with the sequence

$\{m_k\}$; b) $\{m_k\}$ satisfies the C_α -condition of Carleman, c) by the

element $\phi^{(n)}(0) = \dfrac{a_n \cdot n!}{\Gamma(\alpha n + 1)}$, $n = 0,1,2, \ldots$ a function $\phi(t)$ quasi-

analytic on $[0,\infty)$ is determined where $|\phi^{(n)}(t)| \leq \mu_n e^{\sigma t^{1/\alpha}} \quad t \geq 1$,

$a^{1/\alpha} > \sigma$, d) the numbers

$m_n^{\prime} = \dfrac{\mu_n \, \Gamma(\alpha n + 1)}{n!}$ also satisfy the condition C_α - then it

Card 2/ 4

85238

Determination of an Analytic Function From its   S/022/60/013/002/009/011 XX
Asymptotic Series in the Domain   C111/C222
Re $z^{1/\alpha} > a^{1/\alpha}$

holds $f(z) = z^{1/\mu} \int_0^\infty e^{-z^{1/\mu}} \cdot t \phi(t^\alpha) dt$, Re $z^{1/\mu} > a^{1/\alpha}$.

Theorem 2: If the first two conditions of theorem 1 are satisfied for $\alpha > 1$
and besides : c) the element $\phi^{(n)}(0) = \dfrac{a_n \cdot n!}{\Gamma(\alpha n+1)}$, $n = 0,1,2,\ldots$ de-
termines a function $\phi(t)$ quasianalytic on $[0,\infty)$, where

$|\phi^{(n)}(t)| \leq \mu_n e^{\sigma t^{1/\alpha}}$ for $0 \leq t \leq 1$ and $|\phi^{(n)}(t)| \cdot t^n \leq \mu_n e^{\sigma t^{1/\alpha}}$

for $t \geq 1$, $a^{1/\alpha} > \sigma$; d) the numbers $m_n^* = n^{\alpha n} \sum_{k=n}^{[\alpha(n-1)]} \dfrac{\mu_{k+1}}{n^k}$ satisfy

the C_α -condition, then it holds again $f(z) = z^{1/\mu} \int_0^\infty e^{-z^{1/\mu}} t \phi(t^\alpha) dt$ for
Re $z^{1/\alpha} > a^{1/\alpha}$.
Card 3/4

Determination of an Analytic Function From its
Asymptotic Series in the Domain

85238
S/022/60/013/002/009/011 XX
C111/C222

For the proof the author introduces the auxiliary function $f_1(z^{1/\alpha})$ =

$z^{1/\alpha} \int_0^\infty e^{-z^{1/\alpha}\tau} \cdot \phi(\tau^\alpha) d\tau$ and proves that $f_1(z^{1/\alpha}) = f(z)$ in

Re $z^{1/\alpha} > a^{1/\alpha}$. A result of G.V. Badalyan (Ref. 2) is used.

There are 2 references: 1 Soviet and 1 Spanish.

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR (Institute
of Mathematics and Mechanics of the Academy of Sciences
Armyanskaya SSR)

SUBMITTED: August 29, 1959

Card 4/4

SINANYAN, S.O.

Uniqueness of analytic functions on closed sets without
interior points. Sib. mat. zhur. 6 no.6:1365-1381 N-D
'65.   (MIRA 18:12)

SINANYAN, S.O.

Approximation by analytic functions in the mean over an area.
Dokl. AN Arm. SSR   35   no.3:107-112   '62.   (MIRA 16:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
Predstavleno akademikom AN Armyanskoy SSR S.N.Mergelyanom.
                    (Functions, Analytic)

L 19573-65   ENT(d)   IJP(c)/AFWL/ASD(a)-5/ASD(s)

ACCESSION NR: AP5002064

B

AUTHOR: Sinanyan, S. O.

TITLE: Extremal problem for polynomials

SOURCE: Uspekhi matematicheskikh nauk, v. 18, no. 2, 1963, 159-161

TOPIC TAGS: polynomial, interpolation, Chebyshev polynomial, complex variable

ABSTRACT: Let A_α^n $(0 < \alpha < \pi)$ be the class of algebraic polynomials $P_n(z)$ of degree not higher than n (n = 1,2,3,...), satisfying

$$|P_n(z)| < 1 \qquad (1)$$

on an arc $|\arg z| \leq \alpha$ of the circle $|z| = 1$. Theorem 1. For $|\vartheta| > \alpha$ for any polynomial $P_n(z) \in A_\alpha^n$,

$$|P_n(e^{i\vartheta})| < |M_n(e^{i\vartheta})|, \qquad (2)$$

where $M_n(z) \in A_\alpha^n$ and

$$M_n(e^{i\vartheta}) = e^{\frac{in\vartheta}{2}} \cos\left\{ n \arccos \frac{\sin\frac{\vartheta}{2}}{\sin\frac{\alpha}{2}} \right\} \cdot \qquad (3)$$

Card 1/2

L 19573-65
ACCESSION NR: AP5002064

Theorem 2. For polynomials P_n in A_∞^n

$$|P_n(z)| < \frac{1}{2}\left(tg^n\frac{\alpha}{4} + ctg^n\frac{\alpha}{4}\right) \quad (|z|<1), \qquad (4)$$

$$|P_n'(z)| < \frac{n}{2}\left(tg^n\frac{\alpha}{4} + ctg^n\frac{\alpha}{4}\right) \quad (|z|<1), \qquad (5)$$

"The author expresses his gratitude to S. B. Stechkin for the formulation of the problem and his attention to the work." Orig. art. has: 8 formulas.

ASSOCIATION: none

SUBMITTED: 27Feb61

SUB CODE: MA   NR REF SOV: 002

ENCL: 00

OTHER: 001

Card 2/2

SINANYAN, S.O.

Some estimates for a class of polyncmials and their derivatives
bounded on a circular arc. Dokl. AN Arm. SSR 39 no. 3:133-139
'64.   (MIRA 18:1)

1. Institut matematiki i mekhaniki AN ArmSSR.

SINANYAN, S.O.

Extremum problem for polynomials. Usp. mat. nauk 18 no.2:159-161
Mr-Ap '63.   (MIRA 16:3)
(Polynomials)

SINANYAN, S.O.

Possibility of the uniqueness property of analytic functions
being extended to cover closed sets nowhere dense. Dokl.
AN SSSR 154 no.4:779-782 F '64.   (MIRA 17:3)

1. Vychislitel'nyy tsentr AN Armyanskoy SSR i Yerevanskogo
gosudarstvennogo universiteta. Predstavleno akademikom M.V.
Keldyshem.

ARSENT'YEV, Aleksandr Ivanovich; VINOGRADOV, Vladimir Samoylovich;
    DZYUBENKO, Mikhail Grigor'yevich; YESHCHENKO, Aleksey
    Andreyevich; KALYAKIN, Viktor Vasil'yevich; KARMAZIN,
    Vitaliy Ivanovich; KISELEV, Vyacheslav Mikhaylovich;
    KULIKOV Vladimir Vasil'yevich; MELESHKIN, Sergey Mikhaylovich;
    SINARENKO, Aleksandr Ivanovich; KHIVRENKO, Akim Foteyevich;
    SHKUTA, Eduard Ivanovich; SHOSTAK, Afonasiy Grigor'yevich;
    MOSKAL'KOV, Yevgeniy Fedorovich, retsenzent; SOSEDOV, Orest
    Orestovich, retsenzent; ROSSIT, Aleksandr Filippovich, otv.
    red.; SUROVA, V.A., red.izd-va; LAVRENT'YEVA, L.G., tekhn. red.

[Overall development of an iron-ore basin] Kompleksnoe razvitie
zhelezorudnogo basseina. [By] A.I.Arsent'yev i dr.Moskva, Izd-
vo "Nedra," 1964. 293 p.   (MIRA 17:3)

SMITH, P. A.
SHAPTKO, I. A.

MINING ENGINEERING

efficient system of mining at the Komintern mine. Gor. zhur. 126 no. 6 (1952)

9. MONTHLY LIST OF RUSSIAN ACCESSIONS, Library of Congress, September 1952. Uncl.

GORDON, B.Ye., kandidat tekhnicheskikh nauk; ZHUKOV, M.N., gornyy inzhener; SINARENKO, I.A., gornyy inzhener; SHOSTAK, A.G., gornyy inzhener.

Present state and prospects for the development of Krivoy Rog Basin.
Gor. zhur. no.7:3-6 Jl '57. (MLRA 10:8)
(Krivoy Rog--Iron mines and mining)

SIMARENKO, I. A., inzh.; KISELEV, V. M., inzh.

Result of remodeling iron mines of the Krivoy Rog Basin. Izv.
vys. ucheb. zav.; gor. zhur. no.10:32-35 '61.
(MIRA 15:10)

1. Institut Krivbassproyekt.

(Krivoy Rog Basin—Iron mines and mining)

SINADSKIY, N.Ye.; POLOZOVA, I.G.

Increased toxin resistance of erythrocytes in rabbits immunized
with perfrigens toxoid. Zhur.mikrobiol.epid.i immun. 31 no.8:
80-81 Ag '61.   (MIRA 14:6)

1. Iz Urkutskogo instituta travmatologii i ortopedii.
              (CLOSTRIDIUM PERFRIGENS)

11G

Ca

Development of malignant tumors in mice under the action of carcinogenic substances in conditions of cyto-toxic stimulation of the reticulo. I. M. Neiman and A. Ya. Shad. (Central Oncological Inst., Moscow). *Byull. Eksptl. Biol. Med.* 20, No. 6, 56-60(1945).—A study was made of the development of malignant tumors in mice by carcinogen during the systematic stimulation of connective tissue by injection of the anti-reticular cytotoxic serum (ACS) of Bogomolets and Neiman. The serum was prepared by the immunization of rabbits with spleen and bone marrow of mice. Methyl cholanthrene caused fewer tumors in the group of mice that had been given this serum; the tumors that did appear were relatively inactive.
H. Priestley

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

11 G

CA

The role of nonspecific irritation in tissue malignisation
A. Ya. Sinal (Ministry Health, Moscow). *Arkh. Patol.* 13,
No. 6, 32-8(1951).—Expts. with rats painted with methyl-
cholanthrene solns. of croton oil indicate that deposition of
the cancerogenic agent combined with deposition on another
area of a nonspecific irritant (croton oil) in a no. of cases can
lead to development of the malignant tumor on the site of
deposition of the noncancerogenic irritant   L. M. A.

*Lab Occupational Neoplasms, Inst. Labor Hygiene -
Occupational Diseases, AMS USSR*

SINAY, A. Ya.

The cancerogenic properties of some fractions of the Esttonian shale oils. (An experimental study). A. Ya. Sinai. *Voprosy Onkologii* 1, No. 2, 40-2(1955).—Mice of both sexes and of 14-16 g. wt. were used. Five fractions were isolated from the shale oil. The methods of isolation and specific identification of the fractions are not given. The fractions were rubbed into the skin of the animals every other day until each mouse received 50 applications. All fractions produced papillomas and cancerous growths in a manner similar to a methylcholanthrene.   H. S. L.

Lab Occupational Neoplasms, Inst. Labor Hygiene & Occupational Diseases, AMS USSR

SINAY, A-Ya.

Med

The "sensitizing" effect of small doses of carcinogenic substances. I. M. Neiman and A. Ya. Sinaĭ. *Voprosy Onkologii* 2, 77–83(1955).—Four sets of white mice (male and female) were used in the expts. Methylcholanthrene (I) (0.3%) in H₂O-free lanolin was rubbed into the skin between the shoulder blades 3 times a week for 4 weeks. After a rest for two weeks the mice were injected subcutaneously in the inguinal region with 1 mg. of I in 0.5 ml. sunflower seed oil (II), leaving some of the mice as controls. Another set of fresh mice receiving neither I nor II were also used as controls. Rubbing the skin of mice with I seldom resulted in the formation of tumors; it did, however, sensitize the organism in the formation of malignant processes when followed by injection with II. Such sensitization led to the simultaneous development of benign and malignant neoplasms and considerably shortened the time of development of sarcomas at the focus of the subcutaneous injection of the usual type of carcinogenic soln. In the sensitized organism papillomas and cancerous tumors were caused by considerably smaller doses of I.

B. S. Levine.

Lab. Occupational Neoplasms, Inst Labor Hygiene & Occupational Diseases, AMS USSR

DVIZHKOV, P.P., SINAY, A.Ya. (Moskva)

Methylcholanthrene sarcoma in guinea pigs after sensitization
with small dose of cancerogen. Pat.fiziol. i eksp.terap. 2 no.4:
50-51 Jl-Ag '58   (MIRA 11:12)

1. Iz patologoantomicheskoy laboratorii (zav. - prof. P.P. Dvizhkov)
i laboraotrii professional'nykh novoobrazovaniy (zav. - prof. I.M.
Neyman) Instituta gigiyeny truda i profzabolevaniy AMN SSSR (dir.
deystvitel'nyy chlen AMN SSSR prof. A.A. Letavet).
          (CHOLANTHRENE, eff.
                 induction of sarcoma in guinea pigs (Rus))
          (SARCOMA, exper.
                 induction with methylcholanthrene in guinea pigs (Rus))

Sixty, N.Ya.

17(2,6)   SOV/16-60-3-32/37

AUTHORS: Yurnina, M.A., Chitrov, L.L., Mervinova, M.B., Vergelova, N.,
              Chargannikova, M.P., Shul'ma, Z.A., Katenina, K.N., Perova, L.V.,
              Aleksandra, Z.D., Sinay, A.Ya., Sherichevskaya, Ye.F., Shatel, A.I.,
              Golubeva, T.V.

TITLE: The Biological Properties of Shigella Dysenteriae, Isolated From
              Different Clinical Forms of Dysentery. Author's Summary.

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1960, Nr 3,
              pp 128 (USSR)

ABSTRACT: The authors made a study of various strains of Shig. dysenteriae
              isolated from patients with different clinical forms of dysentery,
              checking the strain's ability to cause experimental keratocon-
              junctivitis in guinea pigs, its virulence for mice and its sensitivity
              to antibiotics. No essential differences were found between the strains,
              which bears out the great part played by the state of the macroorganism
              in determining the nature of the clinical course in dysentery.

Card 1/2

ASSOCIATION: Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR
              (Institute of Epidemiology and Microbiology imeni Gamaleya of the
              AMN USSP); Moskovskaya gorodskaya i rayonnaya sanitarno-
              epidemiologicheskaya stantsiya (Moscow City and District Sanitary
              and Epidemiological Station).

SUBMITTED: December 24, 1958

Card 2/2

DVIZHKOV, P.P.; NEYMAN, I.M.; SINAY, A.Ya.; TEMKIN, I.S.

Tumors of the bladder in dogs induced by β-naphthylamine.
Arkh.pat. 22 no.2:18-26 '60.   (MIRA 13:12)
    (BLADDER—TUMORS)   (NAPHTHYLAMINE)

YAKHNINA, N.A.; SHATROV, I.I.; MORDVINOVA, N.B.; KUZNETSOVA, N.S.;
        SHAPOSHNIKOVA, R.P.; SHULMAN, E.A.; KAZACHINA, K.N.; PEROVA, L.V.;
        SALAMANDRA, E.G.; SINAY, A.Ya.; SHERISHEVSKAYA, Ye.F.; SHABAD, A.T.;
        GOLUBEVA, T.V.

        Biological properties of causative agents isolated in various
        clinical forms of dysentery. Zhur. mikrobiol. epid. i immun.
        31 no.3:128 Mr '60.   (MIRA 14:6)
                        (SHIGELLA PARADYSENTERIAE)

SEVORTSOV, V.V.; YDINOVA, G.N.; LUPINA, M.I.; YAKUBOVA, G.R.; SINAY, A.Ya.;
GOLUBEVA, T.V.; MIKHAYLOVA, A.M.; KRASNOVA, F.M.; KOBETSOVA, A.D.

Epidemiology of intestinal infections in children's institutions.
Zhur. mikrobiol. epid. i immun. 32 no.6:47-51 Je '61. (MIRA 15:5)

1. Iz II Moskovskogo meditsinskogo instituta imeni Pirogova i
sanitarno-epidemiologicheskoy stantsii Leninskogo rayona Moskvy.
                    (INTESTINES—DISEASES)

Sinay G.

59. The application of lead intensifying screens for technical X-ray examinations. G. Sinay. Mérés és Automatika. Vol. 4, 1956, No. 1, pp. 15—21, 10 figs.

The author furnishes measurements which were intended to clear up the intensifying conditions of the lead screens. It was established in the course of the measurements that intensification is the result of the joint effect of the characteristic K_α radiation of the lead and the photoelectrons. It is assumed that direct electron absorption plays an important part in the development of blackening. Measurements conducted by the author proved that the amplification factor between 100—200 kv for normal X-ray films increased from 1.78 to 2.12 and for fine-grained films from 1.59 to 2.23 The graph contains the lighting data for steels of max 50 mm wall thickness.

SINAY, G.

TECHNOLOGY

PERIODICA POLYTECHNICA. ENGINEERING. (Budapesti Muszaki Egyetem) Budapest.

SINAY, G. Some remarks on the question of the lasting strength of wire-rope
          couplings. In German. p. 99.

Vol. 2, no. 2, 1958.

Monthly List of East European Accession (EEAI) LC Vol. 8, No. 3
                                          March 1959, Unclass.

VAY, .;   JIPP T. A.

Contraction work as a characteristic of materials. In German. p. 149.

ACTA TECHNICA. (Magyar Tudomanyos Akademia. Budapest, Hungary, Vol. 22, No. 1/2, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 9, No. 7, July 1959 Uncl.

85716

H/011/60/000/009/001/00.
A054/A026

24.1800

11441, 22.03, 1160

AUTHORS: Egri, Imre, Doctor, Candidate of Technical Sciences, Sinay, Gábor,
Engineer and Szemes, Marianne, Physicist

TITLE: Slag Content Determination of Steel Sheets by Ultrasonic Methods
and by the Definition of Contraction Work

PERIODICAL: Gép, 1960, Vol. 12, No. 9, pp. 369-373

TEXT: In the Central Research Laboratory of Measuring Techniques (Buda-
pest), tests were carried out in order to determine the slag content of steel
sheets by ultrasonic methods, in which the detection of inclusions is based
on the phenomenon that ultrasonic vibrations are reflected from the faulty
places or only penetrate them to a small extent. Two variations of this method
were applied. In the "first signal" tests the amplitude of the transmitted
vibrations, and in the "reflexion" tests the amplitude of reflected vibrations
were registered. The transmitter generates pulse-modulated sound vibrations
which penetrate the layer of water with which the sheet is covered as well as
the sheet itself and hit the receiver crystal which transforms them into elec-
tric oscillations. These are amplified by the receiver and measured by a valve
volt meter. The method is suitable to be included in the rolling mill process

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85716

H/011/60/000/009/001/001
A054/A026

Slag Content Determination of Steel Sheets by Ultrasonic Methods and by the
Definition of Contraction Work.

and can easily be automated. The inclusions in the sheet can be measured by
this method if their total surface is so large that

$$F_{fault} > F_{ray} \qquad b$$

where: F_{fault} = the total surface of inclusions, measured in the plane normal
to the beam of sonic rays, F_{ray} = the cross section of the beam, b = the re-
lative uncertainty of measuring. (Abstracter's note: Subscripts fault and
ray are translations of the original hiba and sugar) The "first signal" tests
were completed by tests carried out with the "reflexion" method. In the ultra-
sonic tests vibrations of 3 Mc frequency and a beam of 100 mm^2 cross section
were used. Following the suggestion by Professor F. Gillemot, the ultrasound
tests were checked by defining the contraction work of the sheets examined.
The value of the contraction work was calculated with the following equation:

$$A_c = \frac{\delta_c}{?} (\sigma_p + 2 \sigma_B) + 4.6 \sigma_p + \delta_e) \log \frac{1+\delta_c}{1+\delta_4} + \sigma_B(1+\delta_e)2 \cdot \left[\frac{1}{1+\delta_c} - \frac{1}{1+\delta_c} \right], \qquad (5)$$

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85716

H/011/60/000/009/001/0.
A054/A026

Slag Content Determination of Steel Sheets by Ultrasonic Methods and by the
Definition of Contraction Work

where: σ_F = flow limit, σ_b = tensile strength, δ_e = elongation, (uniform,
specific), δ_2 = specific elongation which can be calculated from the follow-
ing formula: $\delta_2 = \dfrac{\psi^*}{1-\psi}$ (ψ^* = the maximum specific lateral
contraction). Based on the tests on contraction work, the specimens were qua-
lified according to the following rating: the sample was "good", when its
contraction work was $A_c > 50 \text{mkg/cm}^2$, it was "dubious" when $A_c = 40-50 \text{ mkg/cm}^3$
while it was "bad", when $A_c < 45 \text{ mkg/cm}^3$. According to the ultrasonic tests
the specimen was "good", if the decrease in the amplitude of the penetrating
ultrasonic oscillations was $< 10 \%$, "dubious", when the decrease in amplitude
was $= 10 \% - 15 \%$ and "bad", if the decrease in amplitude was $> 15 \%$. By
comparing the assessment of the samples according to the above qualifications,
it was found that 72 % of the samples assessed "good" by the ultrasonic method,
was also accepted as faultless by the contraction work tests. However, inclu-
sions immediately below the surface are not indicated by the contraction tests
and the ultrasonic tests only indicate about 50 % of these inclusions. The

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H/011/60/000/009/001/00:
AC54/A026

Slag Content Determination of Steel Sheets by Ultrasonic Methods and by the
Definition of Contraction Work

contraction work test is not suitable for testing sheets with a laminated struc-
ture in the cross section, whereas the ultrasonic tests indicate these defects
with great accuracy. It may be concluded that the "first signal" ultrasonic
test is suitable for continuous and non-destructive examinations, whereas the
contraction work method is more adapted for random tests. There are 9 figures,
1 table and 3 references. 1 German, and 2 Hungarian (in German translation).

ASSOCIATION: Méréstechnikai Központi Kutató Laboratórium (Central Research La-
boratory of Measuring Techniques), (Egri, Imre and Szemes, Marian-
ne); Fémipari Kutató Intézet (Research Institute of the Metal In-
dustry), (Sinlay, Gábor)

Card 4/4

H/011/62/000/004/001/002
D249/D301

{ |¥|⁰

AUTHORS: Sinay, Gábor, and Csokán, Pál, Doctor

TITLE: Strength properties of aluminum sheets with a cover
of hard oxide layer

PERIODICAL: Gép, no. 4, 1962, 126 - 130

TEXT: The physical and mechanical properties of extra hard oxide
coating were studied which was prepared by a technique developed in
the author's laboratory. The effect of the coating on the substrate
metal was investigated. 25 mm wide bending and tensile strength
test pieces were prepared from sheets of commercial smelted alumin-
um and AlMgSi. The specimens were anodically oxidized in a bath of
diluted H_2SO_4 at 0°C applying a potential of 50 V across the elec-
trolytic cell. The bath was vigorously agitated. Part of the samp-
les was anodized for 30 minutes, another part for 60 minutes. Hard-
ness was determined on the polished cross-section of the samples by
Hanemann's method. 100 G load was applied in these tests. Tensile
strength and yield point were measured on a hydraulic testing machi-

Card 1/3

Strength properties of aluminum ...

H/011/62/000/004/001/002
D249/D301

ne. The elongation was determined afterwards. The same hydraulic
test machine was used for the bending tests. An Amsler high-fre-
quency pulsator was used to determine the homogeneity of oxide
coated AlMgSi specimens. Based on average values the authors' pro-
cess of anodic oxidation gives an oxide coating of 120 - 220 μ
thickness with a Vickers hardness of 450 - 520 kg/mm², in 60 mins.
The influence of the time of anodic treatment is due to the inhomo-
geneity of the oxide film. Comparing the measured strength proper-
ties of the untreated anodically oxidized sheets the following con-
clusions can be reached: 1) A coat of hard oxide reduces the tensi-
le strength. The thinner and softer the sheets, the larger was the
reduction. The largest decrease of tensile strength measured was
25 %. 2) In the case of soft sheets the yield point is not reduced.
The decrease in case of hard sheets can reach 15 - 30 %. 3) The
elongation of anodized thin and soft sheets can decrease by 15 -
30 %. The reduction will be less in case of hard and thick sheets.
It will be nil above a certain thickness. 4) The effect of the
hard oxide coat on the strength properties of the substrate metal
increases with the thickness of the layer. 5) The load necessary to
obtain the bending yield point increases with the thickness of the

Card 2/3

Strength properties of aluminum ...

H/011/62/000/004/001/002
D249/D301

oxide film in case of thin and soft sheets. According to these experimental findings, in the case of drawing strains the hard oxide coating decreases the strength and deformation characteristics, while in the case of bending strain it has a favorable effect. Finally, considerations are given to the application of anodic treatment in the machine industry. There are 6 figures, 3 tables and 22 references: 11 Soviet-bloc and 11 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: R. V. Vanden Berg, M. t. and Meth., 42, 1956, July, 90; J.M. Kape, Metal Ind., 91, 1957, 8, 9, 10 pp.; S. Warwick and R. Pinner, The treatment and finishing of Al and its alloys, Teddington, 1959; Anon. Mechanical World and Engine Record, 1960, no. 6.

ASSOCIATION: Fémipari kutató intézet (Research Institute of the Metal Industry)

Card 3/3

SIMAY, Gabor

Erichsen tests performed with balls of less than 20 mm in diameter. Gep 15 no.12:498-509 D '63.

1. Femipari Kutato Intezet, Budapest.

MIHALYI, Erika; MILOTAY, Gyorgy; SINAY, Gabor

Mathematical formulas for the determination of contraction
work. Gep 16 no. 4:145-151 Ap '64.

1. Research Institute of the Metal Industry.

SINAY, Gabor

Fatigue as the most dangerous cause for machine breakages.
Musz elet 19 no. 6:11   12 Mr '64.

SINAY, Gabor

Most recent achievements in material testing and the possibi-
lities of their application in the aluminum industry. Koh
lap 97 no.3:137-141   Mr'64

1. Femipari Kutato Intezet, Budapest.

L 16498-66   EWP(t)/EWP(k)   JD/HW
ACC NR: AP6008575   SOURCE CODE: HU/0014/65/098/006/0267/0274

AUTHOR: Sinay, Gabor   20
                                                                  B
ORG: none

TITLE: Investigation of the cup-drawing test as to its suitability for the
evaluation of deep-drawability

SOURCE: Kohaszati lapok, v. 98, no. 6, 1965, 267-274

TOPIC TAGS: metal drawing, metal test

ABSTRACT: To qualify as a reliable technique for the evaluation of a metal's
deep-drawability, a test method must faithfully simulate the stresses of the
deep-drawing operations and must also be related to the shape of the product
involved. The following cup-drawing test techniques were evaluated to assess
their suitability according to the foregoing criteria: the Erichsen test (Hun-
garian Standard MSZ 5704-50), the Siebel-Pomp hole-enlarging method, the
Sachs wedge-drawing test, the AEG cup-drawing test, the Schmidt test for de-
termining the critical disc diameter, the Engelhardt method, the Swift cup-
drawing test. On the basis of the detailed considerations presented, it was
concluded that the Erichsen method comes closest to meeting the criteria im-
posed. Orig. art. has: 12 figures, 4 formulas, and 4 tables. [JPRS]
SUB CODE: 13 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 007   2
Card 1/1 SM   UDC: 620.16:621.983

L 34962-66   EWP(t)/ETI   IJP(c)   JH/JD/WB
ACC NR: AP6026663   SOURCE CODE: HU/0014/65/098/008/0353/0356

AUTHOR: Sinay, Gabor—Shinai, G.; Varkonyi, Sandor—Varkoni, Sh.   36

ORG: Research Institute for the Metal Industry (Femipari Kutato Intezet)   B

TITLE: Surface defects observed on sheet aluminum after transportation

SOURCE: Kohaszati lapok, v. 98, no. 8, 1965, 353-356

TOPIC TAGS: aluminum, sheet metal, metal oxidation

ABSTRACT: Surface defects, not unlike mildew stains in appearance, are
occasionally observed on sheet aluminum after shipping. Tests conducted
to establish the causes of this defect indicated that it is caused by
frictional oxidation. This phenomenon has been described by STELJES,
H.A., (Aluminium, Vol 19, No 5, 1937, pp 291-292). In most instances
the stains consist of small indentations less than 0.1 mm. deep, sur-
rounded with a greyish halo. It was proven that the defect is not caused
by inclusions or spark corrosion, and that it does not affect the me-
chanical characteristics of the sheet. The sheets do not corrode further
after the cessation of the cause.   Orig. art. has: 16 figures. [JPRS: 32,491]

SUB CODE: 11 / SUBM DATE: none / OTH REF: 003

Card 1/1   JS   UDC: 669.71:621-413/.416:620.19

SINAJ, G. Ya. and KHATENEVER, L. M., LEVCHENKO, L. A.

"Prophylactic Vaccination against Tularaemia". Tez. Dokl. Vseross. Konf. Mikrobiol. i Epidemiol., Leningrad. 1934.

GITIS, I. T.

Dept. of _____ Clinical Inst. Contagious Diseases. (-1934-).

"Lytic Action of the Bacteriophage of Typhus Abdominalis in er Experiment's Con-ditions."

Zhur. Mikrobiol., Epidemiol., i Immunobiol., No. 4-5, 1934.

Sinaip, G. IA., ed.

Microbiological research methods in the study of communicable diseases. Pod
red. G. IA. Sinaia i O. G. Birgera. 2. perer. izd. Moskva, Med Iz, 1949. 647 p.

Skhai, . . Fu. Ed.

Voprosy pr ikladnoi i i. att.m..matik. [Problem of Applied Math..matics and Mechanics]. Moskva, Izd-vo Akademii Nauk... r SR SSSR, 1954. 422 p.

SO: Monthly List of Russian and Accent, Vol. 7 No. 2 May 1954.

MARGORINA, L.M.; SINAY, G.Ya., professor, zaveduyushchiy; TIMAKOV, V.D., professor, direktor.

Yellow variants of Flexner's and Zonne's dysentery bacilli . Zhur.mikrobiol.epid.i immun. no.3:14-20 Mr '53.   (MLRA 6:6)

1. Otdeleniye kishechnykh infektsiy Instituta epidemiologii i mikrobiologii imeni pochetnogo akademika N.F. Gamalei Akademii meditsinskikh nauk SSSR (for Sinay, Margorina). 2. Institut epidemiologii i mikrobiologii imeni pochetnogo akademika N.F. Gamalai Akademii meditsinskikh nauk SSSR (for Timakov).   (Dysentery)

GERONIMUS, Ye.S.; LITINSKIY, Yu.I.; SINAY, G.Ya., professor, zaveduyushchiy; TIMAKOV, V.D., professor, direktor.

S- and R-forms of Sonne dysentery bacilli and their relationship. Zhur. mikrobiol.epid.i immun. no.8:68-76 Ag '53.   (MLRA 6:11)

1. Otdel epidemiologii Instituta epidemiologii i mikrobiologii im. pochetnogo akademika N.F.Gamalei Akademii meditsinskikh nauk SSSR (for Sinay). 2. Institut epidemiologii i mikrobiologii im. pochetnogo akademika N.F.Gamalei Akademii meditsinskikh nauk SSSR (for Timakov).   (Dysentery)

SINAY, 7.Ya; KORTEV, A.I.

Review of "Problems of prevention and treatment of dysentery," edited by G.IA.Sinai. Sov.med. no.2:46-48 F '54.   (MLRA 7:1)
(Dysentery)

SINAY, YA. G.

PHASE I BOOK EXPLOITATION   SOV/2660

16(1)

Vsesoyuznyy matematicheskiy s'yezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy Institut.

Tech. Ed.: G.N. Shevchenko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.N. Vasil'yev, B.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, N.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

Iorwald, Xxxx (Moscow). Erlang formulas in telephony with an arbitrary distribution law of the duration of conversation   68

Sinay, Ya. G. (Moscow). Distribution of the first positive sum in a sequence of independent random values   70

Cantor, B.H. (Moscow). On the asymptotically best statistical values of a parameter   71

Section on Topology

Vagrov, V.I. (Moscow) and Tu. M. Smirnov (Moscow). On the metric dimension of sets   71

Petrovich, V.A. (Ivanovo) and Ye. S. Tikhomirova (Ivanovo). Uniform homologies   72

Gaishchik, A.L. (Moscow). Cohomologies of the space of paths of homogeneous spaces   72

Card 18/34

SINAY, Ya.G. (Moskva)

Distribution of the first positive sum for the sequence of
independent random variables [with summary in English].   Teor.
veroiat.i ee prim. 2 no.1:126-135 '57.   (MIRA 10:7)
                    (Distribution (Probability theory))

6.9000

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1960, No. 8, p. 394.

6.7011

AUTHOR: Sinay, Ya.G.

TITLE: The Least Error and the Best Transmission Method of Stationary Information During Linear Coding and Decoding in the Case of Gaussian-Channels Being Present in the Link

PERIODICAL: V sb.: Probl. peredachi informatsii, No. 2, Moscow, AS USSR, 1959, pp. 40-48

TEXT: The author investigates the general case of a stationary signal ξ (t) being transmitted over the communication line with a pulse characteristic L (t) distorting the transmitted information by the additive stationary noise ζ (t). In the case of Gaussian ξ (t) and ζ (t), the best transmitting system is that one containing a pre-distortion line filter with a K (τ) pulse characteristic, placed at the start of the line, and a regeneration (decoding) line filter with a M (τ) characteristic, placed at the end of the line. The author describes the method of selecting K (τ) and M (τ), ensuring at the line output at a given information capacity a minimum of error dispersion $\sigma^2 = M \xi(t) - \xi(t)^2$,

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The Least Error and the Best Transmission Method of Stationary Information During Linear Coding and Decoding in the Case of Gaussian-Channels Being Present in the Link

where ξ (t) is the signal at the output of the regenerating filter. It is shown that, if the regeneration of the signal is effected with an infinite delay, the optimum K(t) and M (τ) are those, at which the spectral density of the signal η (t) at the output of the pre-distortion filter can be determined by the formulae

$$f_{\eta\eta}(\lambda) = \left\{ \Theta \sqrt{f_{\xi\xi}(\lambda)\, f_{\zeta\zeta}(\lambda)} \quad \frac{1}{|1(\lambda)|} - \frac{f_{\zeta\zeta}(\lambda)}{|1(\lambda)|^2} \right. \tag{1}$$

for $f_{\eta\eta}(\lambda) \geqslant 0$. 0 - for the remaining λ.
[Editor's Note: The formula (1) is obviously incomplete.] The parameter of Θ is selected in such a way that

$$\int f_{\eta\eta}(\lambda)\, d\lambda = N \tag{2}$$

In formulae (1) and (2) N is the signal power η (t). $f_{\eta\eta}(\lambda)$, $f_{\xi\xi}(\lambda)$, and $f_{\zeta\zeta}(\lambda)$ are the spectral densities of the signals η (t), ξ (t) and of the noise ζ (t); $1(\lambda)$ is the Fourier transformation from L (τ). Moreover, the modulus of frequency characteristic of the pre-distortion filter is determined

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The Least Error and the Best Transmission Method of Stationary Information During Linear Coding and Decoding in the Case of Gaussian-Channels Being Present in the Link

by the formula

$$|k(\lambda)| = \sqrt{\frac{f_{\eta\eta}(\lambda)}{f_{\xi\xi}(\lambda)}}$$

while the frequency characteristic of the decoding filter is determined by the formula

$$m(\lambda) = \left(\frac{1(\lambda)\, k(\lambda)\, f_{\xi\xi}(\lambda)}{|1(\lambda)|^2\, |k(\lambda)|^2\, f_{\xi\xi}'(\lambda) + f_{\zeta\zeta}(\lambda)} \right)$$

where the upper line marks a complex conjugate magnitude. The error dispersion, corresponding to filters with such parameters is equal to

$$\sigma^2 = \int_{-\infty}^{\infty} f_{\xi\xi}(\lambda)\, d(\lambda) - \frac{1}{\Theta} \int_{-\infty}^{\infty} |1(\lambda)| \times$$

$$\times \sqrt{\frac{f_{\xi\xi}(\lambda)}{f_{\xi\xi}(\lambda)}}\, f_{\eta\eta}(\lambda)\, d\lambda.$$

Yu.G.F.

Translator's note: This is the full translation of the original Russian abstract.

Card 3/3

16(1)

AUTHOR: Sinay,Ya.   SOV/20-124-4-10/67

TITLE: On th Concept of Entropy for a   a Dynamical System (O ponyatii
              entropii dinamicheskoy sistemy)

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 124,Nr 4,pp 768-771 (USSR)

ABSTRACT: Let M be a Lebesgue space with a   -algebra of measurable sets
              S and measure   , $(M)=1$; let T be an arbitrary automorphism
              of M (compare $\lceil$Ref 2$\rfloor$). The representation $M = \sum_{i=1}^{n} A_i$ is

              denoted as the finite decomposition $A = A_1,\ldots,A_n$ of M. The

              decomposition $T^k A$ is a decomposition into sets $T^k A_i$,$i=1,\ldots,n$.

              For the entropy of A it holds: $h(A) = - \sum_{i=1}^{n} (A_i)\log (A_i)$.

              Definition: $h_T = \sup_A h_T(A)$ is denoted as the entropy of the

              automorphism T. Let $A = A_1,\ldots,A_n$ and $B = B_1,\ldots,B_1$,where

              the sets B_1 belong to a closed -algebra generated by the sets

Card 1/2

On the Concept of Entropy for a Dynamical System   SOV/20-124-4-10/67

$T^n A_j$, 1 j k, $-\infty$ n ∞ . Then $h_T(P)$ $h_T(A)$. This property is used in order to calculate the entropy of the ergodic automorphism of a two-dimensional torus.
The author thanks A.N.Kolmogorov and V.A.Rokhlin for the valuable discussion of the problem.
There are 4 Soviet references.

PRESENTED: November 25, 1958, by A.N.Kolmogorov, Academician

SUBMITTED: December 3, 1958

Card 2/2

16(1)

AUTHOR: Sinay, Ya.   SOV/20-125-6-6/63

TITLE: On Currents With Finite Entropy (O potokakh s konechnoy entro-
               piyey)

ABSTRACT: The author considers the current (M, γ^{ν}, S^{t}), where M is a
               Lebesgue space with measure μ, γ^{ν} the σ-algebra of its
               measurable sets and S^{t} the group of transformations under which
               the measure is conserved. For the single automorphisms of this
               group the author introduces the entropy

$$h_{s} = \sup_{\Delta > 0} \frac{h_{s}(\Delta)}{\Delta} \quad \text{according to}$$

               Kolmogorov. For the calculation of the entropy the following
               theorem valid for arbitrary automorphisms T is recommended.
               Theorem: Let a sequence of decompositions $\{g_{k}\}$ be given so

               that it is

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On Currents With Finite Entropy   SOV/20-125-6-6/66

$$\mathcal{E}_k < \mathcal{E}_{k+1} \quad , \quad \underset{k}{\sum_{n=-\infty}^{\infty}} T^n g^k = \mathcal{E} \quad \text{where } \mathcal{E} \text{ denotes}$$

the decomposition into single points, and $h(g_k) < \infty$. Then it

is $h_T = \lim\limits_{k \to \infty} h_T (g_k)$.

Furthermore it is shown that there are transitive currents with a denumerably multiple Lebesgue spectrum and arbitrary finite $h_s > 0$. The author considers examples of Kolmogorov. He

mentions Girsanov. - There are 2 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
(Moscow State University imeni M.V. Lomonosov)
PRESENTED: January 16, 1959, by A.N. Kolmogorov, Academician
SUBMITTED: January 16, 1959

Card 2/2

SINAY, Ya.G.

Dynamic ststems and stationary Markov processes. Teor. veroiat.
i ee prim. 5 no.3:335-338 '60.   (MIRA 13:9)
                         (Probabilities)

16/61...

AUTHOR: Sinay, Ya.G.

TITLE: Geodesic Flows on Manifolds of Negative Constant Curvature

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol.131, No.4, pp.752-755.

TEXT: Theorem 1: Geodesic flows on two-dimensional manifolds of negative constant curvature and with a bounded area are Kolmogorov flows (compare (Ref.10)).

Theorem 2: Geodesic flows in the space of n-hedra of n-dimensional manifolds of constant negative curvature and finite area which can be represented as a fundamental domain with finitely many sides of the subgroup Γ (the group of all fractional linear transformations for which the unit circle is invariant) are Kolmogorov flows.

On a compact n-dimensional manifold of constant negative curvature $-k$ ($k > 0$) with the volume V the motion of the linear elements is joined (velocity w). With the aid of the results (Ref.6-9) the author calculates the entropy of the corresponding flow $\{S_t\}$:

Theorem 3: The entropy of the flow $\{S_t\}$ is:

$$h(\{S_t\}) = h(S') = \frac{w\sqrt{k}}{\sqrt[n]{V\omega_{n-1}}} \cdot \log e,$$

!/

Card 1/2

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Geodesic Flows on Manifolds of Negative   S/020/60/131/04/10/073
Constant Curvature

where ω_{n-1} is the area of the $(n-1)$-dimensional unit sphere and where 2
is the base of the log.
There are 12 references: 11 Soviet and 1 American.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova
(Moscow State University im.M.V.Lomonosov)

PRESENTED: December 8, 1959, by A.N.Kolmogorov, Academician

SUBMITTED: December 8, 1959

Card 2/2

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AUTHOR: Sinay, Ya. G.

TITLE: Central Limit Theorem for Geodetic Flows on Manifolds of
    Constant Negative Curvature

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6,
        pp. 1303-1306

TEXT: Definition: A measurable essentially bounded real function f
which is defined on the Lebesque space M with the measure μ (see
(Ref.6)) in which a measurable ergodic flow $\{S^t\}$ is acting, is
said to satisfy the central limit theorem, if for every fixed α ,
$-\infty < \alpha < \infty$ it holds

$$\lim_{t \to \infty} \mu \left\{ x : \frac{\int_0^t f(S^\tau x) \, d\tau - t\bar{f}}{\sqrt{D_t(f)}} < \alpha \right\} = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\alpha} e^{-\frac{u^2}{2}} \, du,$$

where $\bar{f} = \int_M f(x) \, d\mu$

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Central Limit Theorem for Geodetic Flows on Manifolds of Constant
Negative Curvature

and $D_t(f) = \left. \underset{M}{\big\rangle} \left| \int_0^t f(S^\tau x) \, d\tau \right|^2 \; d\omega \right.$.

Theorem 1: The essentially bounded real function f given on the space
M of the line elements of a compact manifold of constant negative
curvature is assumed to satisfy the conditions:

1. There exist $\lambda > 0$, $\varepsilon > 0$, $\varepsilon_1 > 0$, $c_1 > 0$, $c_2 \geq 0$

such for all

$$\mu \left\{ x : \underset{y: \varrho(x,y) < \varrho^{\lambda}}{\text{l.u.b.}} \left| \int_0^\alpha f(G^\tau y) \, d\tau - \int_0^\alpha f(G^\tau x) \, d\tau \right| > \right.$$

$$> \frac{c_1}{\left|\log^{1+\varepsilon} \varrho\right|} \left\} \leq \frac{c_2}{\left|\log^{4+\varepsilon_1} \varrho\right|}$$

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Central Limit Theorem for Geodetic Flows on Manifolds of Constant Negative Curvature

($\varsigma(x,j)$ is the metric in the space of the line elements (Ref.8)).

2. $D_t(f)$ ~ ct for t > ∞, where c > 0.

3. To every   there exist N( ) and T( ) so that for all t > T()
it holds

$$\frac{1}{D_t(f)} \quad x: \quad f(G \quad x)d^- \quad ( ) \quad _t(f) \quad 0 \qquad f(G \quad x)d \qquad d \quad (\quad .$$

Then f obeys the central limit theorem continuous functions f, the modulus of continuity of which possesses the order

$$1/ \quad log^{1+}$$

satisfy the condition 1 in any case. The examination of condition 3 is facilitated by theorem 2, by considering the oricycles N⁻ (see Card 3/6

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S/020/60/153/006/025/051XX
C 111/ C 333

Central Limit Theorem for Geodetic Flows on Manifolds of Constant
Negative Curvature

(Ref.8)) and the decompositions $^t(\quad ^t)$ of the space M (see (Ref.7)).
Let $f \in L^2(M)$. Let f_t (or $\tilde{f}_t$) denote the projection of f on the
Hilbert space of the functions from $L^2(\quad)$ which are constant on the
elements of the decomposition $_j$ (or $\quad$) mod 0.

Theorem 2: Let f be a measurable essentially bounded function on M;
$\overline{f} = 0$. Assume that

1. $\beta_1 > 0$, $c_1 \geq 0$, $c_2 > 0$ exist so that for $t > 0$ it is
$\|f - f_t\| \leq c_1 e^{-\quad}$, $\|f - \tilde{f}_{-t}\| \leq c_1 e^{-\quad}$.

2. $\beta_2 > 0$, $D_1 > 0$, $D_2 > 0$ exist so that
$\left| \int_M f(H^\tau x) \, i(x) \, d\mu \right| \leq D_1 \dfrac{D_2}{t}$.

Then f satisfies the condition 3 of theorem 1.

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C 111/ C 333

Central Limit Theorem for Geodetic Flows on Manifolds of Constant
Negative Curvature

Let z be the coordinate describing the position of the carrier of the
line element on the surface F; θ is assumed to determine the
direction of the line element in every point.

Theorem 3: Functions $f(x) = f(z, \theta)$ which for every z possess a deri-
vative with respect to θ satisfying uniformly in z a Hölder condition
of the fixed order $\alpha > 0$, satisfy the condition 2 of theorem 2.

The author gives two examples. He mentions J. M. Gel'fand, J. J.
Pyatetskij-Shapiro and thanks A. N. Kolmogorov for the subject.

There are 9 references: 7 Soviet 1 German and 1 American.

[Abstracter's note: (Ref.6) is a paper of V. A. Rokhlin in Uspekhi
matematicheskikh nauk, 1949, Vol. 4, No. 2; (Ref. 7) is a paper of
the author in Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 4;
(Ref. 8) is a paper of E. Hopf in Uspekhi matematicheskikh nauk,
1949, Vol. 4, No. 2].

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C 111/ C 333

Central Limit Theorem for Geodetic Flows on Manifolds of Constant
Negative Curvature

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V.
Lomonosova (Moscow State University imeni M. V.
Lomonosov)

PRESENTED: April 9, 1960, by A. N. Kolmogorov, Academician

SUBMITTED: April 6, 1960

Card 6/6